

ART. II.—*On a New Species of Dictyonema.*

(With Plates I and II.)

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The first specimen I saw of this fossil was a fragment given to me in 1889 by Mr. Clark, a student in geology at the Working Men's College. In company with Mr. G. B. Pritchard, I paid a visit to Lancefield, where the specimen had been found, and about five miles north-east of the township we found the quarry. The rock is a soft black slate, dipping at a very high angle, and containing a great deal of iron pyrites, both in nodules, and in disseminated grains. The rock is marked lower silurian on the geological map, and is very near the boundary of the upper silurian which lies to the eastward. We were fortunate in finding numerous fragments of the fossil preserved in a white talcose material and accompanied by graptolites. In turning over a heap of *débris* from the quarry, I found the large slab I have figured covered with mud, but still distinctly showing that I had secured a specimen exhibiting the centre of the polyp-stock. One of the fragments found by Mr. Pritchard fitted on to the larger piece as shown in the lower left hand of Figure I.

Dictyonema is closely allied to the graptolites, but the chitinous supporting rod, so characteristic of the latter, is wanting in the former.

GENUS DICTYONEMA.

*Sub-Order—Campanulariæ; Order—Hydroïda.*

Zittel ("Handb. d. Pal., Bd. I.") gives a definition of the genus which I translate as follows:—"Hydrosome, funnel panner or fan-shaped, with numerous branches almost parallel, strong, forked and united by cross threads. The ends of the branches are free, and are then set on one side with pointed hydrothecæ. The latter appear very perishable and are exceedingly seldom preserved."

## D. GRANDE (n. sp.)

Polyp-stock large, flat, with perhaps the exception of the central portion, which, judging from the distorted condition in which it is preserved, was slightly cup-shaped. The centre is formed by a thread about 2 mm. in length. From each end of this are given off two branches, which, at about 1 mm. from their point of origin, bifurcate nearly at right angles, thus producing eight branches. The outer edges of the branches forming the right angles are straight, and at about 5 mm. from their origin unite, enclosing an elongated fenestrule. The inner edges curve sharply and unite, enclosing a circular fenestrule about 3 mm. in diameter. After this, branches about 1 mm. wide radiate in every direction from the centre, branching dichotomously as they go, and no anastomosis occurs. The branches are united by cross bars which as a rule run nearly at right angles to them, but are in a few cases oblique. The bars are broadened at their junction with the branches, as in the Canadian species described by Prof. James Hall (*Can. Org. Rem.*, Dec. II), and are about 1 mm. wide at their middle. The cross bars cease their appearance at from 2 to 4 cm. from the distal end of the branches which then become very flexible and attenuated. The distance between two adjacent bifurcations of the same branch varies from about 1.5 to 7.5 cm. The fenestrules enclosed by the radiating branches and the cross-bars are generally about 5 mm. wide, and vary from 5 to 25 mm. in length, those towards the centre being smaller and more circular in outline.

The diameter of a perfect specimen has not been determined, and the hydrothecæ are not visible in any of the specimens.

My best thanks are due to Professor W. Baldwin Spencer for his advice during the preparation of this paper.

## DESCRIPTION OF FIGURES.

1. Central portion.
2. Fragment showing termination of branches.
3. Central portion of another specimen.

The figures are natural size.